

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**



**\* NOTICES \***

**Japan Patent Office is not responsible for any damages caused by the use of this translation.**

1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.\*\*\*\* shows the word which can not be translated.

3.In the drawings, any words are not translated.

---

**Bibliography**

---

(19) [Country of Issue] Japan Patent Office (JP)

(12) [Official Gazette Type] Open patent official report (A)

(11) [Publication No.] JP,7-311869,A ✓

(43) [Date of Publication] November 28, Heisei 7 (1995)

(54) [Title of the Invention] The transport device of a bill

(51) [International Patent Classification (6th Edition)]

G07D 9/00 416 C

A63F 7/02 352 F

G07D 7/00 A

[Request for Examination] Un-asking.

[The number of claims] 9

[Mode of Application] FD

[Number of Pages] 5

(21) [Filing Number] Japanese Patent Application No. 6-125781

(22) [Filing Date] May 16, Heisei 6 (1994)

(71) [Applicant]

[Identification Number] 591007918

[Name] Ishiwatari Kiwa

[Address] 1-14-9, Tamazutsumi, Setagaya-ku, Tokyo

(72) [Inventor(s)]

[Name] Ishiwatari Kiwa

[Address] 1-14-9, Tamazutsumi, Setagaya-ku, Tokyo

(74) [Attorney]

[Patent Attorney]

[Name] Sato Akiyoshi

---

[Translation done.]

**\* NOTICES \***



Japan Patent Office is not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.\*\*\* shows the word which can not be translated.

3.In the drawings, any words are not translated.

---

## Summary

---

### (57) [Abstract]

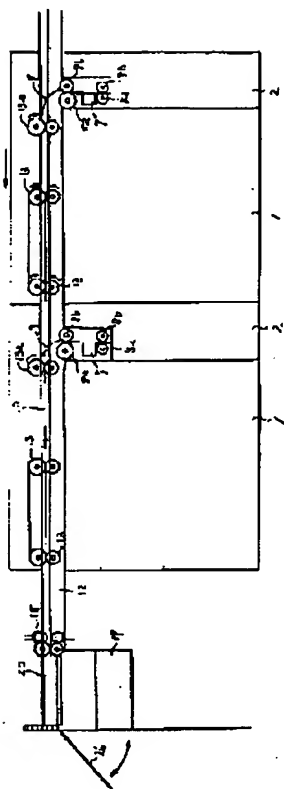
[Objects of the Invention] The fall accident of the bill under conveyance never occurs, moreover, it can prevent lap conveyance, can be made to expropriate it tidily also to a stacker, and makes installation the transport device of the bill is easy and it is made to become cheap on the whole.

[Elements of the Invention] Suppose that it has the delivery mechanism and truth-or-falsehood judging sensor which send the bill which should insert the longitudinal direction of a bill as a vertical direction, and was inserted into the slot for bills in the slot for bills formed in the machine between bases to the upper part or a lower part, it turns the bill made into Shinsei 90 degrees, and a bill side is conveyed to the stacker of \*\*\* as a floor or a ceiling side, and an parallel state.

---

[Translation done.]






---

[Translation done.]

**\* NOTICES \***

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.\*\*\*\* shows the word which can not be translated.

3.In the drawings, any words are not translated.

---

**CLAIMS**

[Claim(s)]

[Claim 1] It is the transport device of the bill characterized by having the delivery mechanism and truth-or-falsehood judging sensor which send the bill which should insert the slot for bills formed in the machine between bases as a vertical direction, and was inserted [ slot for bills ] into the slot for bills in the longitudinal direction of a bill to the upper part or a lower part, turning the bill made into Shinsei 90 degrees, and conveying a bill side to the stacker of \*\*\*\* as a floor or a ceiling side, and an



parallel state.

[Claim 2] Said conveyance way is the transport device of the bill according to claim 1 characterized by being formed so that it may pinch with a belt, a pulley, or a salient roller made into the interval of a size shorter than the length of a thousand-yen bill.

[Claim 3] The machine between bases is the transport device of the bill according to claim 1 or 2 which an independent game base and every one set are considered as a set, and is characterized by establishing the \*\*\*\*\* bill position for each machine conveyance way between bases in amendment guide joint on the conveyance way.

[Claim 4] The claim 1 characterized by establishing the adjustment mechanism with a delivery roller, a quiescence roller, etc. in order to pile up all over a conveyance way and to adjust delivery at a time to one sheet, a claim 2, or the transport device of a bill according to claim 3.

[Claim 5] The claim 1 characterized by pivoting in a part for the transducer of a slot for bills and a conveyance way the piece of a stopper-cum-a guide which prevents a polymerization with the bill of existing \*\*, a claim 2, the transport device of a bill according to claim 3 or 4.

[Claim 6] The claim 1 characterized by having a denomination distinction sensor near the terminal of a conveyance way, operating a guide mechanism according to each denomination, and making it pay in installments to an exclusive stacker respectively, a claim 2, a claim 3, the transport device of a bill according to claim 4 or 5.

[Claim 7] The claim 1 characterized by enabling installation of a bypass on a conveyance way, and taking a \*\* term at the time of conveyance rush hours of a bill, a claim 2, a claim 3, a claim 4, a claim 5, or the transport device of a bill according to claim 6.

[Claim 8] The frame which forms a conveyance way is the transport device of the bill according to claim 1 characterized by having a cutting part, and being able to \*\*\*\* and use him for the linear dimension for which it asks in a pitch suitably as a long thing.

[Claim 9] The transport device of the bill according to claim 1 characterized by arranging a slip pulley or a salient roller etc. which synchronized the sending portion of a conveyance way with the pulley by the side of a discernment machine from the slot for bills, and having lost the \*\*\*\* load to a bill.

---

[Translation done.]

\* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.



- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

## DETAILED DESCRIPTION

---

### [Detailed Description of the Invention]

[0001]

[Industrial Application] this invention is in amusement centers, such as a transport device of a bill especially pachinko, and a slot machine, and relates to the transport device of the bill for even a stacker conveying the bill inserted in the machine between bases the loan of the ball installed between the bases of each game base, or a game medal, or for exchange.

[0002]

[Description of the Prior Art] Conventionally, the slot for bills in the above-mentioned machine between bases shall make a bill side meet [ of a bill ] the game base side from a short hand, shall be inserted, and has become conveyance pinched to the felt belt prepared in the tooth back of a game base, i.e., form that a bill side is conveyed in a game base tooth back and the met direction.

[0003]

[Problem(s) to be Solved by the Invention] however, the bill which the accident to which a bill falls from between felt belts during conveyance occurred frequently if it was in the transport device of this conventional bill, and was newly inserted with the bill under conveyance — selling — \*\* — it did not work but the overlapping jam state was also produced

[0004]

[Objects of the Invention] then, this invention was made paying attention to the trouble of the starting Prior art, cancels this trouble, the fall accident of the bill under conveyance never occurs, moreover, lap conveyance can be prevented, it can be made to expropriate tidily also to a stacker, and installation is aimed at offering the transport device which is the bill which is easy and will become cheap on the whole

[0005]

[Means for Solving the Problem] In order to attain this purpose, the transport device of the bill concerning this invention shall insert the longitudinal direction of a bill for the slot for bills formed in the machine between bases as a vertical direction. It is characterized by having the delivery mechanism and truth-or-falsehood judging sensor which send the bill inserted into the slot for bills to the upper part or a lower part, turning the bill made into Shinsei 90 degrees, and conveying a bill side to the stacker of \*\*\*\* as a floor or a ceiling side, and an parallel state.



[0006]

[Function] By having considered as the above-mentioned composition, never, falling of a bill is lost, it becomes easy to attach lap prevention of a bill and the attachment of a \*\* term mechanism, and can also do institution work the easy thing.

[0007]

[Example] Next, the example of this invention is explained with reference to a drawing. The front view showing the outline composition of the transport device of the bill with which drawing 1 carried out this invention, the plan in which drawing 2 is the same and showing a conveyance way, The side elevation and drawing 4 which drawing 3 is the same and show the slot-for-bills portion of the machine between bases The plan of the terminal portion of the conveyance way in dealing with 3 denominations, The front view of the mechanism in which it sends at a time one bill which drawing 5 is the same, and front view and drawing 6 have in a conveyance way, and is formed near the stacker, The side elevation of the rotation roller, the plan in which drawing 8 is the same and showing the pinching pulley drive of a conveyance way with the same drawing 7 , Front view, front view in which drawing 10 is the same and showing the delivery portion from a discernment machine to a conveyance way with the same drawing 9 , A plan, front view in which drawing 12 is the same and showing the overall composition with the same drawing 11 , The front view in which drawing 13 is the same and showing the joint portion of a conveyance way, a plan and the front view in which drawing 15 is the same and showing the installation state of a bypass with the same drawing 14 , and drawing 16 are the partial front view showing the cutting part who similarly makes \*\*\*\* of a conveyance way possible.

[0008] It is shown in these drawings, and 1 and 1 -- shows game bases, such as pachinko and a slot machine, and each of that game base 1, the machine 2 between bases of 1 -- which can perform a loan or exchange of a ball or a game medal, without a game person leaving a seat in between, and 2 -- are installed. The insertion mouth 3 of a bill is longwise formed in the transverse plane at the machine 2 between this base, and while the bill met the longitudinal direction, it comes to put an edge to this insertion mouth 3.

[0009] Although it has the switching sensor of the optical system which detects insertion near the opening of this insertion mouth 3 and a loading mechanism is made started, this insertion mouth 3 is equipped with the rise-and-fall object 4 which made the bottom cross section the shape of a upward KO character, and it pushes up to the discernment machine 5 formed above the insertion mouth 3. Although the bill made into Shinsei by this discernment machine 5 is sent further upwards, when it considered as \*\*\*\*, the rise-and-fall object 4 fell as it is, and the \*\*\*\* is returned to the insertion mouth 3 shell exterior by the knockout section 6.

[0010] A true tag can be further pulled up from the discernment machine 5 upwards with the pulleys 8a and 8b of the size which made the motor 7 the driving source, and 90 directional changes will be gradually carried out along with the guide lever 9, and it will be sent into the bill conveyance way 10. Moreover, when said guide lever 9



has a bill in having existing conveyed all over the conveyance way 10, the stopper which stops advance of the bill in having existing conveyed temporarily shall also be made to serve a double purpose until the new bill from the discernment machine 5 goes into the conveyance way 10.

[0011] Moreover, the conveyance way 10 of said bill has the parallel frames 11 and 11 with width of face of about about 100mm, and the up-and-down coverings 12 and 12, and the pinching pulley 13 and 13 — are attached between the frame 11 and 11 every [ which is a pitch shorter than the length of a thousand-yen bill ] 70-140mm. As shown in this pinching pulley 13, the double pulley 14 as show 13 — to drawing 2 , or drawing 8 , the pulley 15 with a gear tooth and 15 — shall be hung about by the belt 16 with a gear tooth for every axis, and plurality shall interlock by one motor 17.

[0012] in addition, the bill which 13a of this pinching pulley 13 and 13 — which is in induction from the discernment machine 5 inside is the free slip pulley which synchronized with the pulleys 8a and 8b of the size for delivery in the discernment machine 5, and is produced from a difference of a rotational frequency — tearing off — etc. — breakage accident is prevented

[0013] Furthermore, it has the sensor 18 of the penetrated type optical system which checks passage of a bill near the terminal of the conveyance way 10 of a bill, and by sensing of this sensor 18, a stacker mechanism will start and a bill will be contained to a stacker 19. In addition, recycling use of this stacker 19 can also be carried out as an object for change as the automatic loan machine and money-changing machine which are installed in \*\*\*\*, and combination.

[0014] It is for the bill which passed through between the passage check sensors 18 of said bill to go into the rotation guide bars 20 and 20 which carried out the shape of a cross section of S characters of a couple, to stop, and to be entrapped into a stacker 19 in the rotation operation by gear drive. Moreover, not only a thousand-yen bill but the guide plate 22 which the distinction sensor 21 (optical system) of a penetrated type denomination is attached, and forces a course according to the denomination when three denominations of a ten thousand yen bill of 5000 yen are made usable will be supported pivotably.

[0015] This guide plate 22 by the right inverse rotation of the rotation guide bars 20 and 20 which it was made to go straight on in the case of a large denomination bill, and was described above Exclusive stacker 19a of a vertical position, Pay in installments to 19b, and in the case of a thousand-yen bill, close a guide plate 22, and it leads it to a fork road 23 by the exclusive pulley 24 and 24 —. It can check by the passage sensor 25, can send to between the rotation guide bar 20 of exclusive use, and 20, and can expropriate to stacker 19c only for thousand-yen bills, and recycling use only of this thousand-yen bill can be carried out. In addition, 26 in drawing and 26 — is the door of the sake for [ which was attached to a stacker 19, or 19a, 19b and 19c ] extraction.

[0016] Furthermore, it is desirable, although the delivery mechanism per sheet shown in drawing 6 and drawing 7 as the management although it is possible that a



bill accumulates is attached, since one sheet is put one by one at a time into a bill by the stacker 19, although it is not what was restricted to the type for 3 denominations. It consists of an indexing roller 27 which formed this delivery mechanism in the shape of a spool with urethane etc., and formed Giza 27b and 27b— in the major-diameter sections 27a and 27a, and the indexing roller 27 and the quiescence roller 28 which had distance a little, and in order to press down a bill to this side and to make one sheet slip at a time to it, a pressure plate (guide plate) 29 will be attached. In addition, the quiescence roller 28 can raise the precision which it sends one more sheet at a time by carrying out loose inverse rotation if needed.

[0017] Moreover, in that case, although said conveyance way 10 or frames 11 and 11 can be fabricated as attachment material of the cassette type corresponding to the game base 1 and the set of the machine 2 between bases, the amendment amendment guides 31 and 31 will be attached in each part's joint portion so that neither the guides 30 and 30 for making the bill shown in drawing 13 and drawing 14 open for free passage nor the travelling direction of a bill may shift.

[0018] On the contrary, the frames 11 and 11 as said conveyance way 10 fabricate an inside as smooth long material, form suitably the cutting part 34 as shows drawing 16 , and 34 — outside in the pitch, and can also \*\*\*\* and use a part for required length.

[0019] Furthermore, the bypass 35 for 1:00 \*\* terms in case a bill is crowded can also be attached in the conveyance way 10. Depending on electromotion and the case, it is supported pivotably by the entrance of a bypass 35 so that a lever 36 can operate it also manually, and it can send out to the conveyance way 10 again at the time of a confusion dissolution, and this bypass 35 is good also as another-attaching as an option and carrying out.

[0020] The transport device of the bill concerning this example is constituted as mentioned above, and acts. Therefore, even if even a stacker 19 is in which part from the insertion mouth 3, dealing with the abnormal condition which can be carried out the evil of the operation and taken into consideration is made. Moreover, even if a trouble arises, instant processing can be constitutionally performed in the thing [ opening and closing an arm top cover 12 ], and the need of making a mechanism stopping is also lost. Furthermore, since it considers as conveyance in which the bill side was made to meet a top panel and a floor line, even if a bill has some inclinations and level differences on the way, it will fully function. In addition, although [ this example ] a bill is led upwards, of course, it is also possible to lead below by changing a mechanism, a need person can choose freely, and since the conventional conveyance way etc. and conventional use side (\*\*\*\*) of a coin differ from each other, the maximum effective use is made mutually.

[0021]

[Effect of the Invention] The transport device of the bill concerning this invention is constituted as mentioned above, and operates. Therefore, generating of the fall



accident of a bill like old entirely is lost, and it can also prevent accident, such as heavy delivery and breakage, beforehand. moreover, the composition to construction and a maintenance — doing — easy — a business top — putting — also touching — it decreases and can respond to an emergency trouble immediately from it being user-friendly And since the whole equipment can be managed with easy structure, it is cheap, and can supply and that failure arises also decreases very much.

---

[Translation done.]

**\* NOTICES \***

**Japan Patent Office is not responsible for any damages caused by the use of this translation.**

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

**DESCRIPTION OF DRAWINGS**

---

**[Brief Description of the Drawings]**

[Drawing 1] It is the front view showing the outline composition of the transport device of a bill.

[Drawing 2] It is the plan showing a conveyance way.

[Drawing 3] It is the side elevation showing the slot-for-bills portion of the machine between bases.

[Drawing 4] It is the plan of the terminal portion of the conveyance way in dealing with 3 denominations.

[Drawing 5] It is front view.

[Drawing 6] It is the front view of the mechanism in which it sends at a time one bill which is in a conveyance way and is formed near the stacker.

[Drawing 7] It is the side elevation of the rotation roller.

[Drawing 8] It is the plan showing the pinching pulley drive of a conveyance way.

[Drawing 9] It is front view.

[Drawing 10] It is the front view showing the delivery portion from a discernment machine to a conveyance way.

[Drawing 11] It is a plan.

[Drawing 12] It is the front view showing overall composition.

[Drawing 13] It is the front view showing the joint portion of a conveyance way.

[Drawing 14] It is a plan.



[Drawing 15] It is the front view showing the installation state of a bypass.

[Drawing 16] It is the partial front view showing the cutting part who makes \*\*\*\* of a conveyance way possible.

[Description of Notations]

- 1 Game Base
- 2 Machine between Bases
- 3 Insertion Mouth
- 4 Rise-and-Fall Object
- 5 Discernment Machine
- 6 Knockout Section
- 7 Motor
- 8a Large pulley
- 8b Small pulley
- 9 Guide Lever
- 10 Conveyance Way
- 11 Frame
- 12 Covering
- 13 Pinching Pulley
- 13a Induction pulley
- 19 Stacker
- 20 Rotation Guide Bar
- 21 Denomination Distinction Sensor
- 22 Guide Plate
- 23 Fork Road
- 27 Indexing Roller
- 28 Quiescence Roller
- 29 Pressure Plate
- 30 Guide Made to Open for Free Passage
- 31 Amendment Guide
- 34 Cutting Part
- 35 Bypass
- 36 Lever

---

[Translation done.]

**\* NOTICES \***

**Japan Patent Office is not responsible for any damages caused by the use of this translation.**

1.This document has been translated by computer. So the translation may not reflect the original precisely.

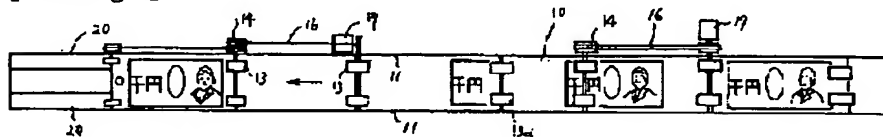


2.\*\*\* shows the word which can not be translated.

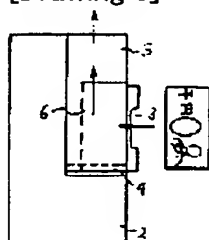
3.In the drawings, any words are not translated.

## DRAWINGS

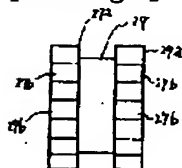
[Drawing 2]



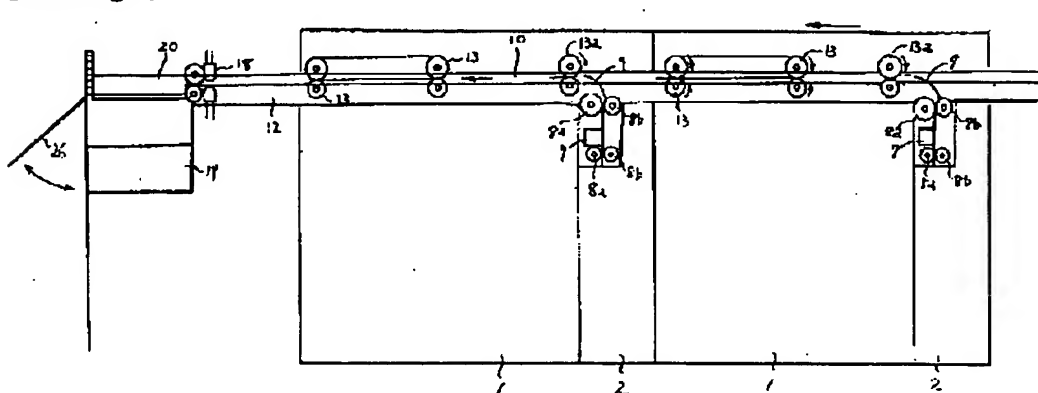
[Drawing 3]



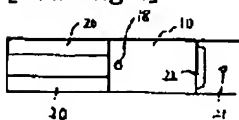
[Drawing 7]



[Drawing 1]

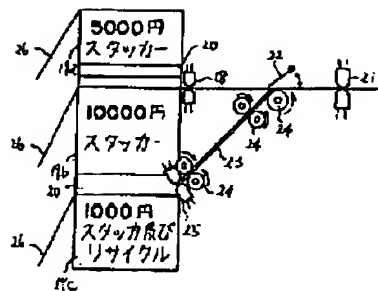


[Drawing 4]

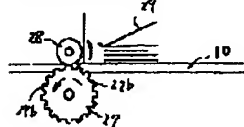


[Drawing 5]

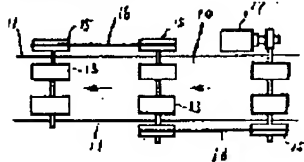




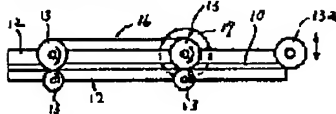
[Drawing 6]



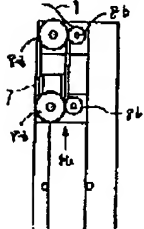
[Drawing 8]



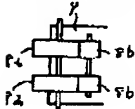
[Drawing 9]



[Drawing 10]

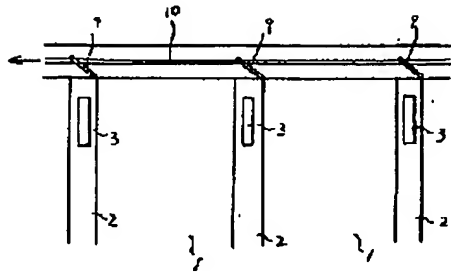


[Drawing 11]

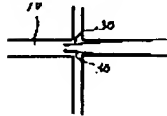


[Drawing 12]

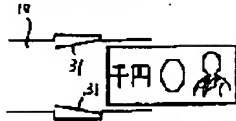




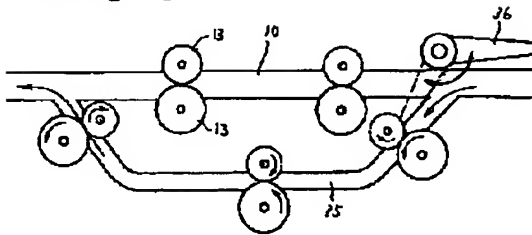
[Drawing 13]



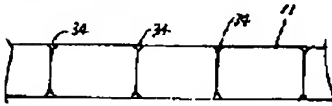
[Drawing 14]



[Drawing 15]



[Drawing 16]




---

[Translation done.]



(19) 日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11) 特許出願公開番号

特開平7-311869

(43) 公開日 平成7年(1995)11月28日

(51) Int.Cl. <sup>8</sup>	識別記号	庁内整理番号	F I	技術表示箇所
G 0 7 D 9/00	4 1 6 C			
A 6 3 F 7/02	3 5 2 F			
G 0 7 D 7/00	A			

審査請求 未請求 請求項の数 9 F D (全 5 頁)

(21) 出願番号 特願平6-125781

(22) 出願日 平成6年(1994)5月16日

(71) 出願人 591007918

石渡 喜和

東京都世田谷区玉堤 1-14-9

(72) 発明者 石渡 喜和

東京都世田谷区玉堤 1-14-9

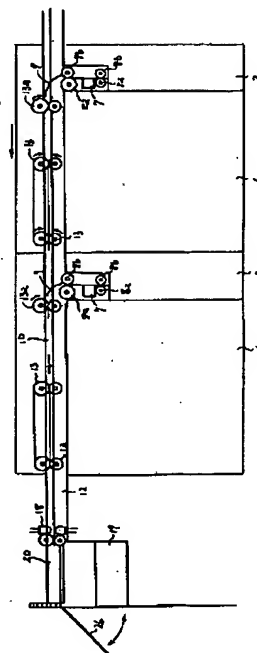
(74) 代理人 弁理士 佐藤 彰芳

(54) 【発明の名称】 紙幣の搬送装置

(57) 【要約】

〔目的〕 搬送中における紙幣の落下事故は決して発生することがなく、しかも、重なり搬送を防止し、スタッカーへも整然と収用させることができ、設置作業も容易で総体的に安価なものとなるようにする紙幣の搬送装置とする。

〔構成〕 台間機に形成された紙幣挿入口を、紙幣の長手方向を上下方向として挿入するものとし、その紙幣挿入口内に挿入された紙幣を上方もしくは下方へ送る送り機構及び真贋判定センサーを備え、真正とされた紙幣は90度方向変換されて紙幣面を床もしくは天井面と平行状態として島端のスタッカーへ搬送することとする。





## 【特許請求の範囲】

【請求項1】 台間機に形成された紙幣挿入口を紙幣の長手方向を上下方向として挿入するものとし、その紙幣挿入口内に挿入された紙幣を上方もしくは下方へ送り送り機構及び真贋判定センサーを備え、真正とされた紙幣は90度方向変換されて紙幣面を床もしくは天井面と平行状態として島端のスタッカーへ搬送することを特徴とする紙幣の搬送装置。

【請求項2】 前記した搬送路は千円札の長さよりも短い寸法の間隔としたベルト、ブリーまたは突起ローラ等で挟持するように形成されることを特徴とする請求項1に記載の紙幣の搬送装置。

【請求項3】 台間機は単独の遊技台と一台づつがセットとされ、搬送路には各台間機搬送路を継ぎ紙幣位置を補正するガイドジョイントが設けられていることを特徴とする請求項1または請求項2に記載の紙幣の搬送装置。

【請求項4】 搬送路中に重ね送りを一枚づつに調整するため、送りローラと静止ローラ等とによる調整機構が設けられていることを特徴とする請求項1、請求項2、または請求項3に記載の紙幣の搬送装置。

【請求項5】 紙幣挿入口と搬送路との変換部分に既送の紙幣との重合を防止するストッパ兼ガイド片が枢着されていることを特徴とする請求項1、請求項2、請求項3または請求項4に記載の紙幣の搬送装置。

【請求項6】 搬送路の端末近くに金種判別センサーを備え、各金種に応じてガイド機構を作動させ、各々専用スタッカーへ分納させることを特徴とする請求項1、請求項2、請求項3、請求項4または請求項5に記載の紙幣の搬送装置。

【請求項7】 搬送路にバイパスを取り付け可能とし、紙幣の搬送混雑時に待期させることを特徴とする請求項1、請求項2、請求項3、請求項4、請求項5、または請求項6に記載の紙幣の搬送装置。

【請求項8】 搬送路を形成するフレームは長尺のものとして適宜ピッチでカッティングパートを備え、所望する長さ寸法に切折して使用できることを特徴とする請求項1に記載の紙幣の搬送装置。

【請求項9】 紙幣挿入口から搬送路の送り込み部分には識別機側のブリーと同期させたスリッブブリーまたは突起ローラ等を配し、紙幣への引張負荷をなくしてあることを特徴とする請求項1に記載の紙幣の搬送装置。

## 【発明の詳細な説明】

## 【0001】

【産業上の利用分野】本発明は紙幣の搬送装置、特にパチンコ、スロットマシン等の遊技場において、各遊技台の台間に設置された玉やゲームメダルの貸出、あるいは両替用の台間機に挿入された紙幣をスタッカーまで搬送するための紙幣の搬送装置に関する。

## 【0002】

【従来の技術】従来、上記した台間機における紙幣挿入口は紙幣の短手方向から、紙幣面を遊技台側面に沿わせて挿入するものとされ、遊技台の背面に設けられたフェルトベルトに挟持しての搬送、つまり、紙幣面が遊技台背面と沿った方向で搬送される形式となっている。

## 【0003】

【発明が解決しようとする課題】しかしながら、この従来の紙幣の搬送装置にあっては搬送中にフェルトベルト間から紙幣が落下してしまう事故が多発し、また、搬送中の紙幣と新規に挿入された紙幣との捌きがうまくいかず重なり合っのジャム状態も生じてしまうものとなっていた。

## 【0004】

【発明の目的】そこで、本発明は係る従来の技術の問題点に着目してなされたもので、かかる問題点を解消して、搬送中における紙幣の落下事故は決して発生することがなく、しかも、重なり搬送を防止し、スタッカーへも整然と収用させることができ、設置作業も容易で総体的に安価なものとなる紙幣の搬送装置を提供することを目的としている。

## 【0005】

【課題を解決するための手段】この目的を達成するために、本発明に係る紙幣の搬送装置は台間機に形成された紙幣挿入口を紙幣の長手方向を上下方向として挿入するものとし、その紙幣挿入口内に挿入された紙幣を上方もしくは下方へ送り送り機構及び真贋判定センサーを備え、真正とされた紙幣は90度方向変換されて紙幣面を床もしくは天井面と平行状態として島端のスタッカーへ搬送することを特徴としている。

## 【0006】

【作用】上記した構成としたことにより、決して紙幣は落下してしまうことがなくなり、紙幣の重なり防止や待期機構の付設も取り付け易くなり、施設作業も容易なものとなるのである。

## 【0007】

【実施例】次に、本発明の実施例を図面を参照して説明する。図1は本発明を実施した紙幣の搬送装置の概略構成を示す正面図、図2は同じく搬送路を示す平面図、図3は同じく台間機の紙幣挿入口部分を示す側面図、図4は三金種対応の場合の搬送路の端末部分の平面図、図5は同じく正面図、図6は搬送路にあってスタッカー近くに設けられる紙幣を一枚づつ送る機構の正面図、図7は同じくその回転ローラの側面図、図8は同じく搬送路の挟持ブリー駆動機構を示す平面図、図9は同じく正面図、図10は同じく識別機から搬送路への送り部分を示す正面図、図11は同じく平面図、図12は同じくその全体的構成を示す正面図、図13は同じく搬送路のジョイント部分を示す正面図、図14は同じく平面図、図15は同じくバイパスの設置状態を示す正面図、図16は同じく搬送路を切折可能とするカッティングパートを示



す部分正面図である。

【0008】これらの図にあって1、1…はパチンコ、スロットマシン等の遊技台を示し、その各遊技台1、1…の間には遊技者が席を離れることなく玉やゲームメダルの貸出あるいは両替を実行できる台間機2、2…が設置されている。この台間機2には正面に紙幣の挿入口3が縦長に形成されており、紙幣はその長手方向に沿った一方縁をこの挿入口3へ挿し入れるようになってい

る。【0009】この挿入口3の開口近傍には挿入を検知する光学系のスイッチングセンサーが備えられローディングメカニズムを起動させることとなるが、この挿入口3には底断面を上向きコ字状とした昇降体4が備えられ、挿入口3の上方に設けられた識別機5へ押し上げるようになっている。この識別機5により真正とされた紙幣はさらに上方へ送られるが、贋札とされた場合はそのまま昇降体4が下がり、押し出し部6によってその贋札を挿入口3から外部へ返却するものとなっている。

【0010】真札は識別機5からモータ7を駆動源とした大小のブーリ8a、8bでさらに上方へ引き上げられガイドレバー9に沿って徐々に90度の方向変換をされ紙幣搬送路10へと送り込まれることとなる。また、前記したガイドレバー9は搬送路10中に既搬送中の紙幣があった場合、識別機5からの新規な紙幣が搬送路10に入るまで既搬送中の紙幣の進行を一時止めるストップも兼用するものとされている。

【0011】また、前記した紙幣の搬送路10は約100mm程度の幅を有した平行のフレーム11、11と上下のカバー12、12を有しており、そのフレーム11、11間に千円札の長さよりも短いピッチである70～140mm置きに挟持ブーリ13、13…が取り付けられている。この挟持ブーリ13、13…は図2に示すようなダブルブーリ14もしくは図8に示すように歯付ブーリ15、15…を軸芯ごとに歯付ベルト16で掛け回し、1つのモータ17で複数個が連動されるものとされている。

【0012】なお、この挟持ブーリ13、13…のうち、識別機5からの導入部にある13aは識別機5における送り用の大小のブーリ8a、8bと同期されたフリーのスリップブーリとなっており、回転数の相違から生じる紙幣の引きちぎり等の破損事故を防止している。

【0013】さらに、紙幣の搬送路10の端末付近には紙幣の通過を確認する透過型の光学系のセンサー18が備えられており、このセンサー18の感知によってスタッカーメカニズムが起動して紙幣をスタッカー19へ収納することになる。なお、このスタッカー19は島端に設置される自動貸出機や両替機と兼用として釣銭用としてリサイクル使用することもできる。

【0014】前記した紙幣の通過確認センサー18間を通過した紙幣は一对の断面S字状をした回転ガイドバー20、20へ入って停止され、ギア駆動による回転作用

でスタッカー19内へ落とし入れられることとなっている。また、千円札のみでなく五千円、一万円札の三金種を使用可能とした場合、透過型の金種の判別センサー21（光学系）が付設され、その金種に応じて進路を強制するガイドプレート22が枢支されることとなる。

【0015】このガイドプレート22は例えば高額紙幣の場合は直進させて、前記した回転ガイドバー20、20の正逆回転で上下位置の専用スタッカー19a、19bへ分納し、千円札の場合はガイドプレート22を閉じて分岐路23へ専用ブーリ24、24…で導き、通過センサー25で確認して専用の回転ガイドバー20、20間へ送り、千円札専用のスタッカー19cへと収納することができ、この千円札のみをリサイクル使用させることができる。なお、図中26、26…はスタッカー19あるいは19a、19b、19cに付けられた取出用のための扉である。

【0016】さらに、三金種用タイプに限ったものではないが、スタッカー19には一枚づつ紙幣が順次入れられるため、紙幣がたまってしまうことが考えられるが、その対処として図6、図7に示す一枚づつの送り機構を付けておくが望ましい。この送り機構はウレタン等でスプール状に形成し、その大径部27a、27aにギザ27b、27b…を形成した回転送りローラ27と、その回転送りローラ27とやや距離をもった静止ローラ28とより構成され、その手前に紙幣を抑えて一枚づつスリップさせるため押え板（ガイド板）29を付けることとなる。なお、静止ローラ28は必要に応じて緩やかな逆回転をさせることでさらに一枚づつ送る精度をアップすることができる。

【0017】また、前記した搬送路10もしくはフレーム11、11は遊技台1と台間機2のセットに対応したカセットタイプの組み付け材として成形できるが、その場合、各パートのジョイント部分には図13、図14に示す紙幣を連通させるためのガイド30、30や紙幣の進行方向がずれないように補正する補正ガイド31、31を取り付けておくこととなる。

【0018】逆に、前記した搬送路10としてのフレーム11、11は内面は平滑な長尺材として成形し、図16に示すようなカッティングパート34、34…を適宜ピッチで外面に形成しておき、必要長さ分を切折して使用することもできる。

【0019】さらに、搬送路10には紙幣が混雑してしまった時の一時待期用のバイパス35を取り付けすることもできる。バイパス35の入口にはレバー36が電動、場合によっては手動でも操作できるように枢支されており、混雑解消時に再び搬送路10へ送り出してやることができ、このバイパス35はオプションとして別付けすることとしてもよい。

【0020】本実施例に係る紙幣の搬送装置は上記のように構成され作用する。従って挿入口3からスタッカー

10

20

30

40

50



19まで、いずれの部位にあっても動作を弊害させることはなく、考慮できる異常状態への対処がなされている。また、仮にトラブルが生じてもその構成上、上カバー12を開閉することで即時の処理ができ、機構をストップさせる必要性もなくなる。さらに、紙幣は天面、床面に紙幣面を沿わせた搬送とされるため、途中で多少の傾斜や段差があっても十分に機能することになる。なお、本実施例では紙幣を上方へ導くこととしたが、機構を変えることで下方へ導いていくことも勿論可能で需要者が自由に選択することができ、硬貨の従来の搬送路等とも使用面（搬路）が異なるため相互に最大限の有効使用ができる。

【0021】

【発明の効果】本発明に係る紙幣の搬送装置は上述のように構成され作動する。そのために、従前のような紙幣の落下事故は一切発生することがなくなり、重ね送りや破損等の事故も未然に防止することができる。また、その構成から施工やメンテナンスもやり易く業務上のさしさわりも減少し、使い勝手がよいことから万一のトラブルに即時に対応できる。そして、装置全体が簡単な構造で済むため、安価で供給でき、故障が生じることも非常に少なくなる。

【図面の簡単な説明】

【図1】紙幣の搬送装置の概略構成を示す正面図である。

【図2】搬送路を示す平面図である。

【図3】台間機の紙幣挿入口部分を示す側面図である。

【図4】三金種対応の場合の搬送路の端末部分の平面図である。

【図5】正面図である。

【図6】搬送路にあってスタッカー近くに設けられる紙幣を一枚づつ送る機構の正面図である。

【図7】その回転ローラの側面図である。

【図8】搬送路の挟持ブリー駆動機構を示す平面図である。

【図9】正面図である。

【図10】識別機から搬送路への送り部分を示す正面図である。

\*【図11】平面図である。

【図12】全体的構成を示す正面図である。

【図13】搬送路のジョイント部分を示す正面図である。

【図14】平面図である。

【図15】バイパスの設置状態を示す正面図である。

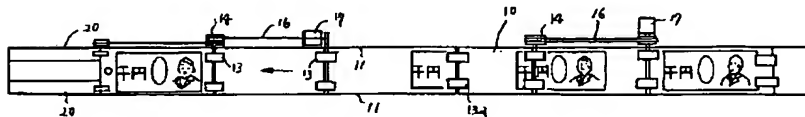
【図16】搬送路を切折可能とするカッティングパートを示す部分正面図である。

【符号の説明】

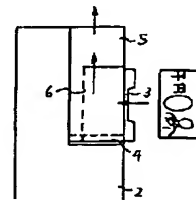
- |    |              |
|----|--------------|
| 10 | 1 遊技台        |
|    | 2 台間機        |
|    | 3 挿入口        |
|    | 4 昇降体        |
|    | 5 識別機        |
|    | 6 押し出し部      |
|    | 7 モータ        |
|    | 8 a 大ブリー     |
|    | 8 b 小ブリー     |
|    | 9 ガイドレバー     |
| 20 | 10 搬送路       |
|    | 11 フレーム      |
|    | 12 カバー       |
|    | 13 挟持ブリー     |
|    | 13 a 導入部ブリー  |
|    | 19 スタッカー     |
|    | 20 回転ガイドバー   |
|    | 21 金種判別センサー  |
|    | 22 ガイドプレート   |
|    | 23 分岐路       |
| 30 | 27 回転送りローラ   |
|    | 28 静止ローラ     |
|    | 29 押え板       |
|    | 30 連通させるガイド  |
|    | 31 補正ガイド     |
|    | 34 カッティングパート |
|    | 35 バイパス      |
|    | 36 レバー       |

\*

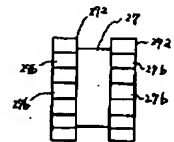
【図2】



【図3】

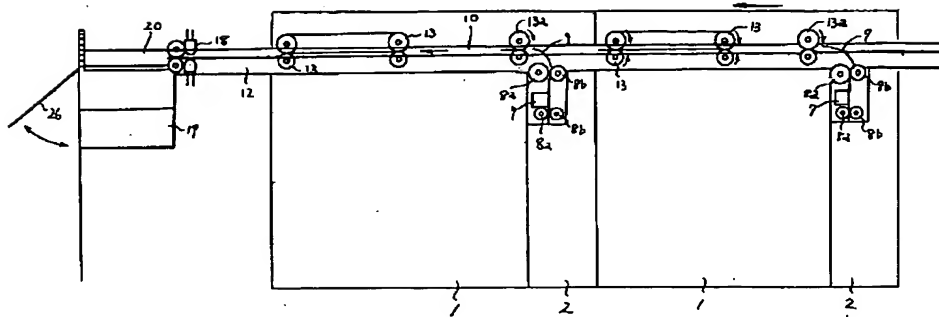


【図7】

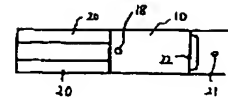




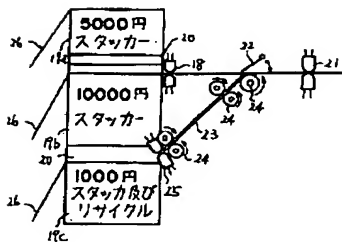
【図1】



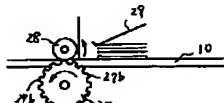
【図4】



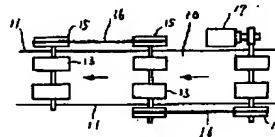
【図5】



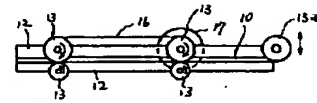
【図6】



【図8】

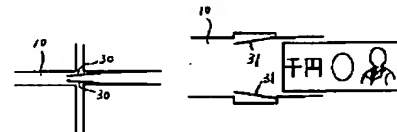


【図9】



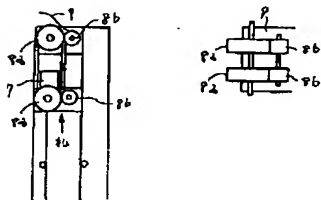
【図14】

【図13】

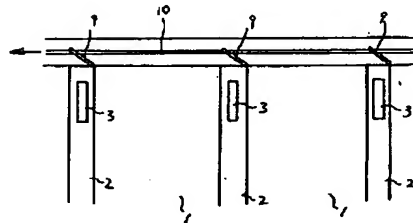


【図10】

【図11】



【図12】



【図15】

【図16】

